The Information-Seeking Behaviors of Pediatricians regarding Treatment Benefits and Harms at Lehigh Valley Health Network (LVHN).

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Published In/Presented At

Werbeckes, N. Barraco, R. Karagias, M. Stewart, M. Reynolds, S. (2018, March). *The Information-Seeking Behaviors of Pediatricians regarding Treatment Benefits and Harms at Lehigh Valley Health Network (LVHN)*. Poster Presented at: 2018 SELECT Capstone Posters and Presentations Day. Kasych Family Pavilon, Lehigh Valley Health Network, Allentown, PA.

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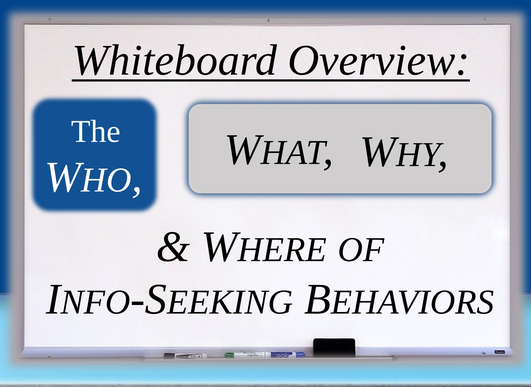


Introduction

Parents are presenting to pediatric clinics with information about their child's health with increasing frequency.

Pediatricians regularly face the challenge of finding, evaluating and discussing an ever-evolving body of medical information with patients.

It is not comprehensively known how pediatricians at LVHN obtain clinically relevant information necessary to address the needs of patients and parents.

This study was designed to investigate how pediatricians at the Lehigh Valley Health Network (LVHN) seek information directly related to patient care and the factors influencing these behaviors (e.g. attitudes, barriers, perceptions).

Problem Statement

How do pediatricians at LVHN seek information directly related to patient care and what factors influence these behaviors?

Methodology

Investigation was an IRB approved, unrestricted educational grant funded, prospective study conducted at an academic medical center. Members of the medical staff were eligible to be enrolled. Using stratified purposive and random purposive sampling to evaluate similarities and differences across specialties at LVHN, the number of physicians sampled was generated and displayed in Table 1, right.

Presented is an interim analysis restricted to members of the medical staff within the Department of Pediatrics.

Table 1. Capstone Project Generated Sample Size

Department	Total Number of Physicians	Sampled participants
Dental Medicine	69	5
Emergency & Hospital Medicine	128	13
Family Medicine	165	16
Medicine	381	45
Obstetrics and Gynecology	63	5
Pediatrics	123	15
Psychiatry	26	2
Surgery	196	25
Total	1051	126

The study consisted of a scripted interview using previously validated methodology including specific analytic techniques & questions seen in Figure 1, below. All interviewers were trained by the lead author of the related pilot study. Interviews were recorded and transcribed by a member of the investigative team. Analysis aimed at identifying major themes was qualitative and presented with descriptive statistics displayed in Table 2 and Figures 2 through 4 .

Figure 1. Analyzed Interview Questions List

1) What is your specialty?
2) What is the average # of patients you see every month?
3) What is the average # of patients per month that bring along searched information during visits?
4) When patients bring information during a consultation, what is it about?
5) What is the typical source(s) of information patients generally bring during visits?
6) What is your reaction to patients bringing searched information during consultations?
7) What type of response do you get from patients when you do not support their sources?
8) How do you search for information on benefits (e.g., survival, event-free survival, response rate, etc.) and harms (e.g., treatment related mortality and morbidity) of treatments?
9) Where do you search for information on benefits and harms of treatments?
10) How do you determine the credibility of the information you accessed on benefits, harms & treatments?
11) How do you define reliability?
12) Do you have any preference for a certain information resource?
13) Why do you prefer this specific source(s)?
14) Are you able to easily access the desired source?
15) Do you have the resources to access your desired source?
16) Do you prefer to use a certain device to access this information, such as a computer, phone, etc.?
17) Are you satisfied with your current process of seeking information on benefits and harms of treatments?
18) What kinds of faculty development sessions will be beneficial for you in addressing your evidence search needs?
19) How often would the sessions need to be offered?
20) What are your preferences for the location of these sessions?
21) Do you use any software programs to assist you in decision making at the patients' bedside? Do you have a preference for a particular program?
22) Currently, how are these programs paid for? That is, do you pay out-of-pocket or use department continuing medical education (CME) funds for these services?
23) What else do you need in order to better meet your needs related to the evidence that you tend to use for shared medical decision making?

Results

Table 2. Participant Demographics

Characteristic	Category	Value
Years in Practice	Mean	18.33
	Standard Deviation	3.98
Pediatric Specialty	Pediatrics - General	10
	Neonatal/Perinatal Med	3
	Pediatrics - HemeOnc	1
	Pediatrics - Cardiology	1
Medical Degree	MD	13
	DO	2
Country of Undergraduate Med Edu.	United States	12
	India	1
	Ecuador	1
	Germany	1
Mean # patient encounters per Month	Mean	204.2
	Standard Deviation	104.8
% Patient Encounters with Medical Info per Month	General Practice Mean	14%
	Subspecialty Mean	18%

A total of 15 pediatricians were enrolled, 60% of which were female. Pediatricians favored mobile-interfacing (60%) information sources with diagnosis-centric page organization (e.g. UpToDate; 80%). Most participants (60%) considered online tutorials designed to raise awareness of LVHN's library resources available on-demand a beneficial investment for LVHN.

Most requested resource:
Network Subscription to UpToDate (86.67%)

Figure 2. What Searched Information Patients Bring to Discuss

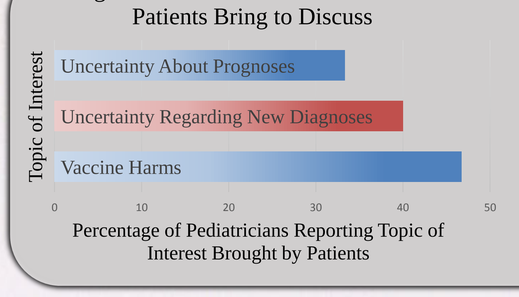
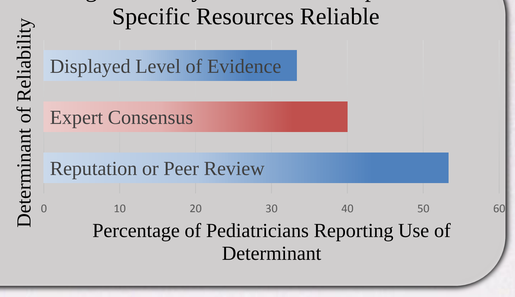
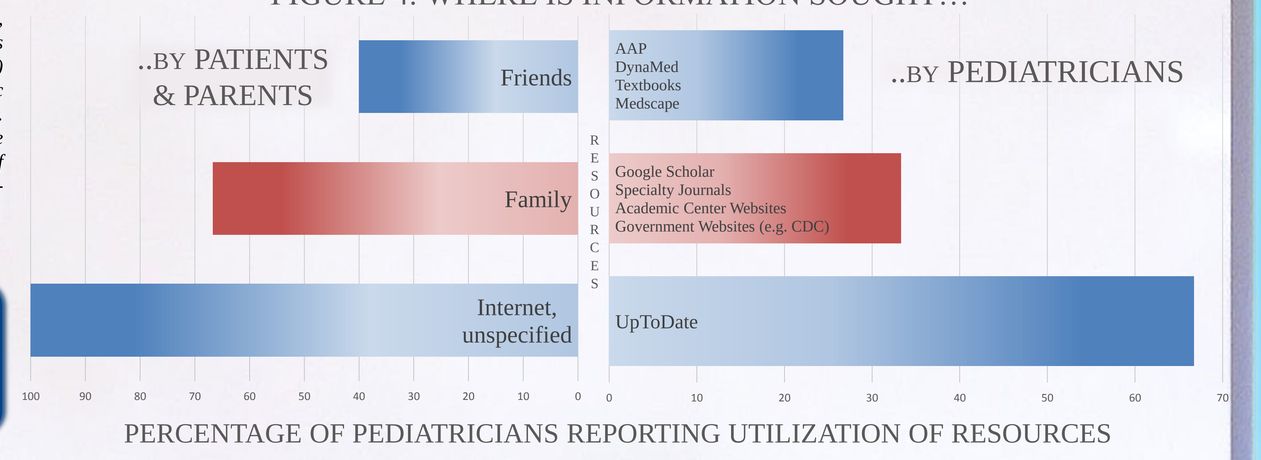


Figure 3. Why Pediatricians Reported Specific Resources Reliable



"All physicians reported positive attitudes towards information-sharing interactions with patients."

FIGURE 4. WHERE IS INFORMATION SOUGHT…



Conclusions & Implications

On the Information-Seeking Behaviors of Pediatricians & the Influencing Factors

Pediatricians favored mobile-interfacing information sources with diagnosis-centric page organization (e.g. UpToDate, DynaMed).
The following were the most frequently reported factors influencing information-seeking behaviors of pediatricians:

Reliability

Peer-review, resource reputation and expert consensus were reported as most influential indicators of resource reliability.

Determining reliability of information-seeking resources seemed to be a decision made early in the practice of most pediatricians (i.e. years prior to this investigation). Resources were considered reliable if they provided peer-reviewed recommendations and maintained a reputation of reliability among peers. Most interviewed pediatricians deferred to others in the medical community some aspects of the duty to determine resource reliability. Specifically, pediatricians reported peer-review, resource reputation and expert consensus as primary determinants of reliability for the resources used to gather clinically relevant information. The reason for shifting the onus of determining reliability was reportedly a lack of time to continually evaluate evidence. This shift implies trust among pediatricians.

Despite shifting some responsibility for the determination of reliability to others, many pediatricians reported an inclination to use resources that displayed evidence quality grades alongside recommendations. There seemed a hesitancy to entirely rely on the judgement of peers, especially considering the favorability for resources with links directing users to the primary literature associated with specific recommendations. The pediatricians interviewed demonstrated reasonable skepticism about the information presented by the resources utilized; however, they reported infrequent reevaluation of resource reliability due to limiting factors, the greatest of which was time. Evidence grades and links to primary literature were viewed as a "next best alternative" to evaluating evidence individually.

Familiarity

Familiarity was the most frequently cited reason for using one perceived reliable resource over a similar one (e.g. UpToDate vs. DynaMed).

Habitual workflows are an effective way to increase efficiency by reducing variability; however, habits can be harmful if left in place without occasional reevaluation. It would be informative to learn how different a resource must be perceived to overcome the familiarity factor supporting the use of a currently employed resource. Learning more about how familiar one must feel and how to cultivate a useful degree of familiarity may benefit the clinicians of a health network interested in consolidating or transitioning network-sponsored resources.

Limited Available Time

As the "rate-limiting" resource, available time is reported to impact many aspects of the information-seeking process.

Time was reported as holding primary influence over nearly every component of medical practice, not least of which is Information-Seeking for patient care. Lack of Available Time was frequently reported in support of Familiarity's influence on Information-Seeking Behaviors. When pressed for time pediatricians choose familiar resources for information-seeking because the location of the information is more likely readily navigable. Few participants complained about the time required to seek information. The focus of frustration was most often in regards to the perceived unnecessary tasks within the process for accessing information for patient care.

Pediatrician Recommended

Lack of available time was a primary focus when interviewed pediatricians provided the following three suggestions for improving the process of seeking clinically relevant information:

1) Provide access to network subscription of UpToDate.

2) Raise awareness of LVHN's library resources.
Participants emphatically and consistently recommended that any attempt to raise awareness should not increase the amount of time demanded of physicians by the network. On-demand, online tutorials were suggested due to their universal accessibility and for the potential to learn at opportune moments.

3) Reduce "noise" on the library resources page.
The number of links on LVHN's library resources website reportedly appears cluttered and increases the amount of time spent on the page before identifying a desired resource. Decreasing the number of links was suggested in an effort to save time and simplify information-seeking workflows.

Future Investigations

Identify Patient & Parent Sources

Additional investigations into the specific websites patients use to inform themselves as well as the origin of the family-derived information may be helpful first steps towards understanding how to change the behaviors of caregivers to LVHN's pediatric patient population & may lead to less clinical time spent debunking poorly sourced information.

UpToDate Network Subscription Cost-Benefit Analysis

Given the most frequently reported information-seeking resource utilized among pediatricians is one not included among network-provided resources, a thorough cost-benefit analysis regarding the acquisition of an UpToDate network subscription may be in order to determine the overall impact on LVHN. The wasted time associated with individual subscriptions was reportedly frustrating enough at an individual level to deter physicians from investigating all clinical questions. This unintended consequence may negatively impact patients and lead to greater utilization of health care resources due to misinformed care delivery. On a systems level, it may be worth investigating the sum total amount of time spent by network clinicians on tasks specific to accessing UpToDate individual subscriptions (i.e. a few minutes wasted by every clinician every workday may justify the investment in a network subscription).

How to Influence Behavior While Helping Others Feel Heard

Every pediatrician interviewed reported positive attitudes regarding information-sharing interactions with patients. Remarkably, participants that elaborated on strategies used when confronted with such situations all reported similar approaches to the encounters: (1) listen to assess the patient or parent's understanding & identify the underlying concerns; (2) validate the patient or parent's experience; (3) share expertise directed at underlying concern. Despite the contentious topics in the field of pediatrics such as vaccine harms – which was reported as the topic most frequently broached in these settings by parents – this listen-first-to-understand approach demonstrated consistently positive results.

Relation to SELECT Competencies

Values-Based Patient-Centered Care (VBPCC)

Shared decision making is a key component of VBPCC, which is crucial for patient engagement and satisfaction in modern medicine. Facilitating patient-centered shared decision making is not possible without the information that patients and families require to make medical decisions. This investigation was designed to address the foundation of shared decision-making, the process of gathering clinically relevant information.

Health Systems

A focus throughout was learning more about the health systems aspect of facilitating access to educational resources for a network of diverse people who seek information through various methods. The importance of logistics was the primary theme of what I gleaned about this process. For example, deciding between a network subscription to UpToDate versus providing continued medical education (CME) funds for the purchase of individual subscriptions may seem equivocal; everyone can still access UpToDate if they so choose without spending personal finances. However, logistically unintended consequences (e.g. physicians required to log in several times each day whenever accessing UpToDate) and the valuable resources spent on those consequences may illustrate an objectively better choice between the available options if factored into the decision. Through this project I've gained a better understanding of necessary processes to undertake before inducing change into a health system.

Leadership

This project relates to the reflective aspects of leadership. Gaining a better understanding of the past through reflection can improve leaders' abilities to guide others into the future. Throughout the interviews conducted for this investigation, physician leaders were asked to reflect upon the habits they've formed and evaluate how they could improve. As uncomfortable as self-reflection may be due to the inadequacies uncovered, the self-awareness gained is the foundation of self-improvement, the benefits of which can be further translated to more effective leadership.

Special Thanks to…

..The Anderson Family for support through a Collaborative Research Grant

..our encouraging and wise project Leaders: Dr. Robert Barraco (principal investigator), Dr. Bryan Kane, and Dr. Rahul Mhaskar

..our driven, organized, and inspiring Project Coordinator, Angela Davis

..my fellow collaborative Info-seeking teammates (alphabetically): Jordan Davies, Maria Karagias, Robert Postlethwaite, Matthew Molnar, MPH, Samuel Reynolds, MD, and Monica Stewart

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